of Si02 were necessary, one and the same whether the decarburisation had only taken place to small extent or had taken place completely. Thus a total quantity of silica sufficed of an amount of 0*7 -f- 2*29, or O3 units of weight, per unit of weight of P in the charge . . . (39).

An astonishing condition is disclosed by the silicate slag; the iron content of which apparently admits without difficulty of being brought down to approximately 10 per cent, in it, even with the highest amounts of calcium phosphate in the total slag. One may therefore very well assume that the before-quoted minimum amounts of metallic oxides, viz., 10 per cent. Fe and 10 per cent. Mn, corresponding to 13 per cent. FeO and 13 per cent. MnO, can be taken possession of by the hypothetical silicate slag alone.

Investigation of the question of how much hypothetical silicate slag can originate from 1 unit of weight of silica, discloses that these amounts are much greater in the case of complete decarburisation than in only partial decarburisation. Whilst on complete decarburisation, there are on an average in the silicate slag 4"78 unit weights of silicate slag por unit of weight of SiO^, which slag thus contains about 21 per cent. BiO^, there are formed on an average on decarburisation down to 2 per cent, to 3 per cent, only 2*9 parts (40) of this silicate slag per part of BiOa, HO that this slag shows about 34 per cent. SiOg.

These estimates are now sufficient in order to fix the demand of the silicate slag for bases, having regard to the condition that other impurities also (some clays) in amounts of approximately 4 per cent, get into the slag. The compoeiiioa of the slag must then be as under :-

Metallic Ox id en "FoO+MuO Impuritios .
Balance GoX) and MgO
Total
Ill UlO Ih'onrb
OHHO uriNi
of'ooinpl to ii—
olo I)
IHU* t
Iccarbur
iMutUm
.
Per For
cent. cent.
21 . 34
26 . 26
.
4 . 4
51 (J4
49 . 30
100
100